

Supplemental Online Content

Ioannou GN, Baraff A, Fox A, et al. Rates and factors associated with documentation of diagnostic codes for long COVID in the national Veterans Affairs health care system. *JAMA Netw Open*. 2022;5(7):e2224359. doi:10.1001/jamanetworkopen.2022.24359

eTable 1. Description of the Multivariable Logistic Regression Models Used to Evaluate Factors Associated With the Outcome of Documentation of Long-COVID Care (ie, COVID-19 *ICD-10* Codes ≥ 3 Months After Testing Positive for SARS-CoV-2 Infection) Among 198,601 VA Enrollees Who Tested Positive for SARS-CoV-2 Infection From February 2020 to April 2021 With Follow-up Extending to December 31, 2021

eTable 2. Associations Between Baseline Characteristics and the Documentation of COVID-19 *ICD-10* Codes ≥ 3 Months After Testing Positive for SARS-CoV-2 Infection Among 198,601 VA Enrollees Who Tested Positive for SARS-CoV-2 Infection From February 2020 to April 2021 With Follow-up Extending From 90 to 240 Days Since Infection

eFigure. Forest Plot of the Associations (Adjusted Odds Ratios) of Selected Patient Characteristics With Documentation of COVID-19 *ICD-10* Codes ≥ 3 Months After Testing Positive for SARS-CoV-2 Infection Among 198,601 VA Enrollees Who Tested Positive for SARS-CoV-2 Infection From February 2020 to April 2021 With Follow-up Extending to December 31, 2021

This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1. Description of the Multivariable Logistic Regression Models Used to Evaluate Factors Associated With the Outcome of Documentation of Long-COVID Care (ie, COVID-19 *ICD-10* Codes ≥ 3 Months After Testing Positive for SARS-CoV-2 Infection) Among 198,601 VA Enrollees Who Tested Positive for SARS-CoV-2 Infection From February 2020 to April 2021 With Follow-up Extending to December 31, 2021

Characteristic of Interest	Co-variables included in the logistic regression model	Study population: Time Period of SARS-CoV-2 Infection	Follow-up period for outcome ascertainment
Age	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Sex	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Race	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Ethnicity	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
urban/rural residence	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021

Charlson Comorbidity Index (CCI)	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
VISN	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Time period of infection	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending up to 8 months after infection
BMI	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index and BMI	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Diabetes	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Diabetes	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Chronic Obstructive Pulmonary Disease (COPD)	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and COPD	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Asthma	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and	February 1, 2020 to April 30, 2021	Extending to December 31, 2021

	number of specialty care visits in the prior 2 years and Asthma		
Congestive Heart Failure (CHF)	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and CHF	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Myocardial Infarction (MI)	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and MI	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Cerebrovascular Disease	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Cerebrovascular Disease	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Chronic Kidney Disease	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Chronic Kidney Disease	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Peripheral Arterial Disease	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Peripheral Arterial Disease	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Venous Thromboembolism	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Venous Thromboembolism	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Obstructive Sleep Apnea	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental	February 1, 2020 to April 30, 2021	Extending to December 31, 2021

	health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Obstructive Sleep Apnea		
Obesity Hypoventilation Syndrome	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Obesity Hypoventilation Syndrome	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Opioids	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index and Opioids	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Antidepressants	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index and Antidepressants	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Statins	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index and Statins	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
ACE Inhibitors	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index and ACE Inhibitors	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Angiotensin receptor blockers (ARBs)	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity	February 1, 2020 to April 30, 2021	Extending to December 31, 2021

	Index and Angiotensin receptor blockers		
Calcium Channel Blockers	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index and calcium channel blockers	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Number of primary care visits in prior 2 years	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Number of mental health visits in prior 2 years	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Number of specialty care visits in prior 2 years	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Hospitalization within 30 days of infection	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Mechanical Ventilation for acute infection	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021

Number of vaccine doses received at the time of infection†	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	January 1, 2021 to April 30, 2021	Extending to December 31, 2021
Number of Symptoms at presentation with acute infection	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Symptoms at the time of acute infection	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Abdominal pain	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Chills	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Cold	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Cough	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental	February 1, 2020 to April 30, 2021	Extending to December 31, 2021

	health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index		
Diarrhea	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Dyspnea	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Fatigue	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Fever	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Headache	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Loss of smell	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021

Loss of taste	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Myalgia	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Nausea	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Rhinorrhea	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021
Sore throat	Age, sex, race, ethnicity, urban/rural residence, VISN*, time period of infection, number of primary care visits in the prior 2 years, number of mental health visits in the prior 2 years and number of specialty care visits in the prior 2 years and Charlson Comorbidity Index	February 1, 2020 to April 30, 2021	Extending to December 31, 2021

* VISN is the VA Integrated Service Network

eTable 2. Associations Between Baseline Characteristics and the Documentation of COVID-19 ICD-10 Codes ≥3 Months After Testing Positive for SARS-CoV-2 Infection Among 198,601 VA Enrollees Who Tested Positive for SARS-CoV-2 Infection From February 2020 to April 2021 With Follow-up Extending From 90 to 240 Days Since Infection

	COVID-19 ICD-10 codes documented from 90 to 240 days after infection, N (%)			
Characteristics	No N=180,870	Yes N=17,731	Crude Odds Ratio	Adjusted Odds Ratio*
A. Sociodemographic characteristics				
Age, years				
18-49	49125 (94.1%)	3098 (5.9%)	1	1
50-69	33343 (91.4%)	3142 (8.6%)	1.49 (1.42, 1.57)	1.33 (1.26, 1.41)
60-64	18884 (90.7%)	1935 (9.3%)	1.62 (1.53, 1.72)	1.34 (1.25, 1.42)
65-69	18497 (89.5%)	2174 (10.5%)	1.86 (1.76, 1.97)	1.46 (1.37, 1.56)
70-74	31325 (89.4%)	3724 (10.6%)	1.89 (1.79, 1.98)	1.49 (1.40, 1.58)
75-79	14669 (88.8%)	1844 (11.2%)	1.99 (1.88, 2.12)	1.56 (1.46, 1.67)
80-84	6901 (88.9%)	858 (11.1%)	1.97 (1.82, 2.14)	1.57 (1.44, 1.72)
85-89	5069 (89.3%)	606 (10.7%)	1.90 (1.73, 2.08)	1.55 (1.41, 1.71)
≥90	3045 (89.7%)	350 (10.3%)	1.82 (1.62, 2.05)	1.53 (1.36, 1.73)
Sex				
Male	160963 (91.0%)	15979 (9.0%)	1	1
Female	19907 (91.9%)	1752 (8.1%)	0.89 (0.84, 0.93)	1.06 (1.01, 1.12)
Race				
White	122191 (91.2%)	11733 (8.8%)	1	1
African American or Black	40529 (90.6%)	4204 (9.4%)	1.08 (1.04, 1.12)	1.11 (1.06, 1.15)
Asian	1811 (92.2%)	153 (7.8%)	0.88 (0.75, 1.04)	1.13 (0.95, 1.34)
American Indian or Alaska Native	1650 (90.3%)	178 (9.7%)	1.12 (0.96, 1.31)	1.23 (1.05, 1.44)
Native Hawaiian or Pacific Islander	1702 (90.5%)	179 (9.5%)	1.10 (0.94, 1.28)	1.10 (0.94, 1.29)
Declined or Missing	12987 (91.0%)	1284 (9.0%)	1.03 (0.97, 1.09)	1.09 (1.02, 1.17)
Ethnicity				
Not Hispanic or Latino	156508 (91.1%)	15214 (8.9%)	1	1
Hispanic or Latino	17810 (90.2%)	1925 (9.8%)	1.11 (1.06, 1.17)	1.17 (1.10, 1.23)
Declined or Missing	6552 (91.7%)	592 (8.3%)	0.93 (0.85, 1.01)	0.94 (0.86, 1.04)
Rural/Urban Residence				
Rural	27932 (92.1%)	2394 (7.9%)	1	1
Urban	126030 (91.1%)	12252 (8.9%)	1.13 (1.08, 1.19)	1.12 (1.06, 1.17)
Unknown	26908 (89.7%)	3085 (10.3%)	1.34 (1.26, 1.41)	1.35 (1.27, 1.43)
VA Integrated Service Network (VISN)				
VISN 08	14081 (90.0%)	1571 (10.0%)	1	1
VISN 01	6229 (92.3%)	521 (7.7%)	0.75 (0.68, 0.83)	0.79 (0.71, 0.88)
VISN 02	8036 (91.3%)	768 (8.7%)	0.86 (0.78, 0.94)	0.88 (0.80, 0.97)
VISN 04	7975 (91.2%)	765 (8.8%)	0.86 (0.79, 0.94)	0.91 (0.83, 0.99)
VISN 05	4812 (88.5%)	626 (11.5%)	1.17 (1.06, 1.29)	1.18 (1.07, 1.30)
VISN 06	11300 (92.9%)	866 (7.1%)	0.69 (0.63, 0.75)	0.69 (0.63, 0.76)

VISN 07	15480 (91.5%)	1429 (8.5%)	0.83 (0.77, 0.89)	0.88 (0.81, 0.95)
VISN 09	8424 (91.7%)	759 (8.3%)	0.81 (0.74, 0.88)	0.79 (0.72, 0.86)
VISN 10	14082 (90.7%)	1449 (9.3%)	0.92 (0.86, 0.99)	0.92 (0.85, 0.99)
VISN 12	8869 (91.1%)	870 (8.9%)	0.88 (0.81, 0.96)	0.89 (0.82, 0.98)
VISN 15	8746 (91.9%)	769 (8.1%)	0.79 (0.72, 0.86)	0.82 (0.75, 0.90)
VISN 16	12387 (92.4%)	1015 (7.6%)	0.73 (0.68, 0.80)	0.78 (0.72, 0.85)
VISN 17	12892 (86.7%)	1971 (13.3%)	1.37 (1.28, 1.47)	1.49 (1.39, 1.60)
VISN 19	8665 (90.8%)	881 (9.2%)	0.91 (0.84, 0.99)	1.01 (0.92, 1.10)
VISN 20	4636 (91.4%)	437 (8.6%)	0.84 (0.76, 0.94)	0.93 (0.84, 1.05)
VISN 21	7718 (90.6%)	798 (9.4%)	0.93 (0.85, 1.01)	0.96 (0.88, 1.05)
VISN 22	15786 (91.6%)	1445 (8.4%)	0.82 (0.76, 0.88)	0.85 (0.79, 0.92)
VISN 23	10749 (93.1%)	791 (6.9%)	0.66 (0.60, 0.72)	0.72 (0.66, 0.79)
Time period of infection				
Before June 1, 2020	10867 (93.5%)	757 (6.5%)	1	1
June 1 to October 31, 2020	43625 (91.3%)	4181 (8.7%)	1.38 (1.27, 1.49)	1.52 (1.40, 1.65)
November 1, 2020 to April 30, 2021	126378 (90.8%)	12793 (9.2%)	1.45 (1.35, 1.57)	1.65 (1.52, 1.78)
B. Comorbid Conditions				
Charlson Comorbidity Index (CCI)				
0	73521 (93.9%)	4817 (6.1%)	1	1
1	38055 (91.5%)	3548 (8.5%)	1.42 (1.36, 1.49)	1.24 (1.18, 1.30)
2	26940 (90.5%)	2844 (9.5%)	1.61 (1.54, 1.69)	1.29 (1.22, 1.36)
3	14911 (88.4%)	1962 (11.6%)	2.01 (1.90, 2.12)	1.49 (1.41, 1.59)
4	10289 (87.7%)	1441 (12.3%)	2.14 (2.01, 2.28)	1.52 (1.42, 1.63)
5-6	10706 (85.9%)	1752 (14.1%)	2.50 (2.36, 2.65)	1.70 (1.59, 1.82)
7-8	4460 (83.4%)	890 (16.6%)	3.05 (2.82, 3.29)	2.00 (1.84, 2.18)
≥9	1988 (80.6%)	477 (19.4%)	3.66 (3.30, 4.06)	2.30 (2.05, 2.57)
Body Mass Index, Kg/m²				
<18.5	1438 (88.0%)	196 (12.0%)	1.23 (1.05, 1.43)	1.06 (0.91, 1.24)
18.5-25	25277 (90.0%)	2802 (10.0%)	1	1
>25-30	58395 (91.4%)	5490 (8.6%)	0.85 (0.81, 0.89)	0.91 (0.87, 0.96)
>30-35	52970 (91.5%)	4921 (8.5%)	0.84 (0.80, 0.88)	0.91 (0.87, 0.96)
>35-40	26611 (91.1%)	2614 (8.9%)	0.89 (0.84, 0.94)	0.96 (0.90, 1.01)
>40	15046 (90.0%)	1675 (10.0%)	1.00 (0.94, 1.07)	1.07 (1.00, 1.14)
Diabetes				
No	120270 (92.1%)	10357 (7.9%)	1	1
Yes	60599 (89.2%)	7374 (10.8%)	1.41 (1.37, 1.46)	1.08 (1.04, 1.11)
Chronic Obstructive Pulmonary Disease				
No	155169 (91.9%)	13662 (8.1%)	1	1
Yes	25700 (86.3%)	4069 (13.7%)	1.80 (1.73, 1.87)	1.42 (1.36, 1.48)
Asthma				
No	168131 (91.3%)	16034 (8.7%)	1	1
Yes	12738 (88.2%)	1697 (11.8%)	1.40 (1.32, 1.47)	1.32 (1.25, 1.39)

Congestive Heart Failure				
No	169258 (91.5%)	15652 (8.5%)	1	1
Yes	11611 (84.8%)	2079 (15.2%)	1.94 (1.84, 2.03)	1.36 (1.29, 1.43)
Myocardial Infarction				
No	177345 (91.2%)	17111 (8.8%)	1	1
Yes	3524 (85.0%)	620 (15.0%)	1.82 (1.67, 1.99)	1.33 (1.22, 1.46)
Cerebrovascular Disease				
No	177667 (91.2%)	17202 (8.8%)	1	1
Yes	3202 (85.8%)	529 (14.2%)	1.71 (1.55, 1.87)	1.26 (1.15, 1.39)
Chronic Kidney Disease				
No	158427 (91.7%)	14374 (8.3%)	1	1
Yes	22442 (87.0%)	3357 (13.0%)	1.65 (1.58, 1.72)	1.23 (1.17, 1.28)
Peripheral Arterial Disease				
No	163641 (91.6%)	15014 (8.4%)	1	1
Yes	17228 (86.4%)	2717 (13.6%)	1.72 (1.65, 1.80)	1.24 (1.19, 1.30)
Venous Thromboembolism				
No	176715 (91.2%)	17020 (8.8%)	1	1
Yes	4154 (85.4%)	711 (14.6%)	1.78 (1.64, 1.93)	1.34 (1.24, 1.46)
Obstructive Sleep Apnea				
No	122371 (91.8%)	10929 (8.2%)	1	1
Yes	58498 (89.6%)	6802 (10.4%)	1.30 (1.26, 1.34)	1.15 (1.11, 1.19)
Obesity Hypoventilation Syndrome				
No	180112 (91.1%)	17574 (8.9%)	1	1
Yes	757 (82.8%)	157 (17.2%)	2.13 (1.79, 2.53)	1.57 (1.32, 1.87)
C. Medications				
Opioids				
No	171575 (91.4%)	16242 (8.6%)	1	1
Yes	9295 (86.2%)	1489 (13.8%)	1.69 (1.60, 1.79)	1.26 (1.19, 1.34)
Antidepressants				
No	122314 (91.5%)	11428 (8.5%)	1	1
Yes	58556 (90.3%)	6303 (9.7%)	1.15 (1.12, 1.19)	1.02 (0.98, 1.05)
Statins				
No	90490 (92.6%)	7193 (7.4%)	1	1
Yes	90380 (89.6%)	10538 (10.4%)	1.47 (1.42, 1.51)	1.00 (0.96, 1.04)
ACE Inhibitors				
No	128323 (91.7%)	11681 (8.3%)	1	1
Yes	52547 (89.7%)	6050 (10.3%)	1.26 (1.22, 1.31)	0.99 (0.95, 1.02)
ARBs				
No	155699 (91.5%)	14542 (8.5%)	1	1
Yes	25171 (88.8%)	3189 (11.2%)	1.36 (1.30, 1.41)	1.04 (0.99, 1.08)
Calcium Channel Blockers				
No	115061 (92.2%)	9697 (7.8%)	1	1

Yes	65809 (89.1%)	8034 (10.9%)	1.45 (1.40, 1.49)	1.22 (1.18, 1.26)
D. Healthcare Utilization				
Number of primary care visits in prior 2 years				
0-5	87409 (92.9%)	6674 (7.1%)	1	1
6-11	50835 (90.8%)	5164 (9.2%)	1.33 (1.28, 1.38)	0.99 (0.95, 1.04)
≥12	41380 (87.7%)	5780 (12.3%)	1.83 (1.76, 1.90)	0.96 (0.90, 1.01)
Number of mental health visits in prior 2 years				
0	100656 (91.5%)	9401 (8.5%)	1	1
1-6	36020 (91.1%)	3535 (8.9%)	1.05 (1.01, 1.09)	1.02 (0.98, 1.07)
7-19	24854 (90.5%)	2607 (9.5%)	1.12 (1.07, 1.18)	1.10 (1.05, 1.15)
≥20	18094 (89.7%)	2075 (10.3%)	1.23 (1.17, 1.29)	1.15 (1.09, 1.21)
Number of specialty care visits in prior 2 years				
0	3553 (94.8%)	193 (5.2%)	1	1
1-9	86819 (93.4%)	6163 (6.6%)	1.31 (1.13, 1.51)	1.19 (1.03, 1.38)
10-18	47577 (90.8%)	4799 (9.2%)	1.86 (1.60, 2.15)	1.49 (1.28, 1.73)
≥19	41675 (86.6%)	6463 (13.4%)	2.85 (2.46, 3.31)	1.95 (1.67, 2.29)

* Adjusted by multivariable logistic regression for age (using the categories shown), sex, race, ethnicity, urban/rural residence, CCI, VISN, time period of infection (categorized according to the “waves” of the pandemic as shown), and number of primary care, mental health and specialty care encounters in the two year prior to infection. When we evaluated the associations of any of the individual comorbidities (e.g. COPD, CHF, CKD, diabetes, depression, PTSD, bipolar/schizoaffective, cancer, hypertension, obesity, cerebrovascular disease, smoking and others) we did not simultaneously adjust for the CCI because it would result in overadjustment.

eFigure. Forest Plot of the Associations (Adjusted Odds Ratios) of Selected Patient Characteristics With Documentation of COVID-19 ICD-10 Codes ≥ 3 Months After Testing Positive for SARS-CoV-2 Infection Among 198,601 VA Enrollees Who Tested Positive for SARS-CoV-2 Infection From February 2020 to April 2021 With Follow-up Extending to December 31, 2021

A

B

